Application No. 09/868,379
Filing Date: 08/15/2001
Examiner: Lezah Roberts
Art Unit: 1612

Art Unit: 1612 Attorney Docket No.2006-219/H03763

II. Amendment

Applicants amend claims 8–9, 13–16 and 20–25, as set forth below in a listing of all of the claims in the application, with the status of each claim noted parenthetically, in accordance with 37 C.F.R. Section 1.121. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claims 1-7. canceled.

Claim 8. (currently amended) A suspension of one or more phosphate calcium salts, fluoride calcium salts, or fluorophosphate calcium salts in a liquid medium in which the salts are less than 1 g/l soluble, wherein the calcium salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.01% by weight, based on the weight of the suspension, of a water-soluble polymeric protective colloid selected from the group consisting of gelatin, casein, starch, plant gums, cellulose ethers, methylcellulose, hydroxyethylcellulose, carboxymethylcellulose, hydroxyethylstarch and hydroxypropylguar, resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

Response to Office Action dated April 30, 2008

PATENT

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Claim 9. (currently amended) A suspension comprising 1% to 40% by weight of one or more phosphate calcium salts, fluoride calcium salts or fluorophosphate calcium salts in a liquid medium in which the salts are less than 1 g/l soluble, wherein the calcium salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, said particles stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.1% by weight, based on the weight of the one or more calcium salts, of a water-soluble polymeric protective colloid selected from the group consisting of gelatin, casein, starch, plant gums, cellulose ethers, methylcellulose, hydroxyethylcellulose, carboxymethylcellulose, hydroxyethylstarch and hydroxypropylguar, resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

Claims 10-12. (canceled)

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Claim 13. (currently amended) A toothpaste comprising one or more silica polishing agents, humectants, binders or aromas and 0.1-5% by weight of one or more calcium salts selected from the group consisting of amorphous calcium phosphate, hydroxylapatite, fluoroapatite, and calcium fluoride, said calcium salts being present in the form of a suspension of one or more of the salts in a liquid medium in which the salts are less than 1 g/l soluble, wherein the salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.01% by weight, based on the weight of the suspension, of a water-soluble polymeric protective colloid selected from the group consisting of gelatin, casein, starch, plant gums, cellulose ethers, methylcellulose, hydroxyethylcellulose, carboxymethylcellulose, hydroxyethylstarch and hydroxypropylguar resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

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Claim 14. (currently amended) A method of remineralizing teeth comprising the steps of applying to a tooth a remineralizing-effective amount of a suspension of one or more phosphate calcium salts, fluoride calcium salts, or fluorophosphate calcium salts in a liquid medium in which these salts are less than 1 g/l soluble, wherein the calcium salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.01% by weight, based on the weight of the suspension, of a water-soluble protective colloid selected from the group consisting of gelatin, casein, starch, plant gums, cellulose ethers, methylcellulose, hydroxyethylcellulose, carboxymethylcellulose, hydroxyethylstarch and hydroxypropylguar resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

Claim 15. (currently amended) A suspension of one or more phosphate calcium salts, fluoride calcium salts, or fluorophosphate calcium salts in a liquid medium according to claim 8, in which the salts are less than 1 g/l soluble, wherein the calcium salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.01% by weight, based on the weight of the suspension, of a water-soluble gelatin resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

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Claim 16. (currently amended) A suspension according to claim 9, comprising 1% to 40% by weight of one or more phosphate calcium salts, fluoride calcium salts or fluorophosphate calcium salts in a liquid medium in which the salts are less than 1 g/l soluble, wherein the calcium salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, said particles stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.1% by weight, based on the weight of the one or more calcium salts, of a water-soluble gelatin resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

Claims 17-19. (canceled)

Claim 20. (currently amended) A toothpaste according to claim 13, comprising one or more silica polishing agents, humectants, binders or aromas and 0.1–5% by weight of one or more calcium salts selected from the group consisting of amorphous calcium phosphate, hydroxylapatite, fluoroapatite, and calcium fluoride, said calcium salts being present in the form of a suspension of one or more of the salts in a liquid medium in which the salts are less than 1 g/l soluble, wherein the salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.01% by weight, based on the weight of the suspension, of a water-soluble gelatin resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

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Claim 21. (currently amended) A method of remineralizing teeth according to claim 14, comprising the steps of applying to a tooth a remineralizing-effective amount of a suspension of one or more phosphate calcium salts, fluoride calcium salts, or fluorophosphate calcium salts in a liquid medium in which these salts are less than 1 g/l soluble, wherein the calcium salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.01% by weight, based on the weight of the suspension, of a water-soluble gelatin resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

Claim 22. (currently amended) A toothpaste according to claim 13 comprising at least one humectant and 0.1–5% by weight of one or more calcium salts selected from the group consisting of amorphous calcium phosphate, hydroxylapatite, fluoroapatite, and calcium fluoride, said calcium salts being present in the form of a suspension of one or more of the salts in a liquid medium in which the salts are less than 1 g/l soluble, wherein the salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of form 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.1 by weight, based on the weight of the suspension, of a water-soluble polymeric protective colloid selected from the group consisting of gelatin, casein, starch, plant gums, cellulose ethers, methylcellulose, hydroxyethylcellulose, carboxymethylcellulose, hydroxyethylstarch and hydroxypropylguar resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

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Claim 23. (currently amended) A toothpaste according to claim 22, comprising one or more silica polishing agents, humectants, binders or aromas and 0.1–5% by weight of one or more calcium salts selected from the group consisting of amorphous calcium phosphate, hydroxylapatite, fluoroapatite, and calcium fluoride, said calcium salts being present in the form of a suspension of one or more of the salts in a liquid medium in which the salts are less than 1 g/l soluble, wherein the salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.1 by weight, based on the weight of the suspension, of a water-soluble gelatin resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

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Claim 24. (currently amended) A method of remineralizing teeth according to claim 14 comprising the steps of applying to a tooth a remineralizing-effect effective amount of a suspension comprising 1% to 40% by weight of one or more phosphate calcium salts, fluoride calcium salts, or fluorophosphate calcium salts in a liquid medium in which these salts are less than 1 g/l soluble, wherein the calcium salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.1% by weight, based on the weight of the suspension, of a water-soluble protective colloid selected from the group consisting of gelatin, casein, starch, plant gums, cellulose ethers, methylcellulose, hydroxyethylcellulose, carboxymethylcellulose, hydroxyethylstarch and hydroxypropylguar resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.

Claim 25. (currently amended) A method of remineralizing teeth according to claim 24 comprising the steps of applying to a tooth a remineralizing-effective amount of a suspension comprising 1% to 40% by weight of one or more phosphate calcium salts, fluoride calcium salts, or fluorophosphate calcium salts in a liquid medium in which these salts are less than 1 g/l soluble, wherein the calcium salts comprise primary particles having diameters of from 5 to 50 nanometers and lengths of from 10 to 150 nanometers, stabilized against agglomeration by wherein the calcium salts are formed by precipitation reactions from acidic aqueous solutions of water-soluble calcium salts and aqueous solutions of water-soluble phosphate or fluoride salts at an increased pH using an aqueous alkali or ammonia and in the presence of a content of at least 0.1 % by weight, based on the weight of the suspension, of a water-soluble gelatin resulting in the colloid being adsorbed onto said particles and the particles being stabilized against agglomeration.